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A JOURNAL OF HORTICULTURE LANDSCAPE ART AND FORESTRY

SEPTEMBER 16, 1891

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Possibilities of Economic Horticulture.
EDITORIAL.

The Ferns of Mexico. (Illustrated.)
By C. G. PRINGLE and GEORGE E. DAVENPORT.

The Cultivation of Onions in Bermuda. (Illustrated.)
By RUSSELL HASTINGS.

Hardy Plants in Autumn.
By J. N. GERARD.

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TABLE OF CONTENTS.

PAGE.

EDITORIAL ARTICLES:—Artist and Client 433
Laws to Protect Street-trees 434
A Garden Pool. (With figure.) 434
A Fine Road 435
Notes on North American Trees.—XXVII . . . . . *Professor C. S. Sargent.* 435
NEW OR LITTLE-KNOWN PLANTS:—Cereus (Pilocereus) Sargentianus. *C. R. Orcutt.* 436
FOREIGN CORRESPONDENCE:—London Letter . . . . . *W. Goldring.* 436
CULTURAL DEPARTMENT:—Iris reticulata and its Allies . . . . . *Max Leichtlin.* 438
Keeping Fruit in Winter . . . . . *T. H. Hoskins, M.D.* 439
Dracænas . . . . . *W. H. Taplin.* 440
Notes on American Plants . . . . . *F. H. Horsford.* 440
Hybridizing the Sweet Pea . . . . . *Rev. W. T. Hutchins.* 440
CORRESPONDENCE:—Gardening on the Shores of Buzzards Bay . . . *Wm. Minot, Jr.* 441
Pitch Pine from Seed . . . . . *Bayberry.* 442
RECENT PUBLICATIONS 442
PERIODICAL LITERATURE 443
NOTES 444
ILLUSTRATIONS:—Cereus (Pilocereus) Sargentianus, Fig. 69 437
A Garden Pool, Fig. 70 439

Artist and Client.

"IN the magnificent city of Ephesus," wrote Vitruvius nearly nineteen centuries ago, "there was an ancient law, hard indeed, but equitable, to the effect that when an architect was entrusted with the execution of a public work, an estimate thereof being lodged in the hands of the magistrate, his property was held as security until the work was finished. If, when finished, the expense did not exceed the estimate, he was complimented with degrees and honors. So when the excess did not amount to more than one-fourth of the estimate, no punishment was inflicted. But when the excess was greater than this amount the architect was required to pay it out of his own pocket. Would that such a law existed among the Roman people, not only in respect of their public, but also of their private, buildings, for then unskillful architects would not commit their depredations with impunity, and only those who were the most skillful in the intricacies of the art would practice it. Proprietors would not be led into ruin through extravagant expenditure. Architects themselves would be constrained to closer accuracy in their calculations, and the proprietor would complete his building for the amount, or a little more than the amount, which he expected to expend. Those who can afford a given sum for any work would cheerfully add one-fourth more in the pleasing expectation of seeing it completed; but when they find themselves burdened with the addition of half, or even more than half, the expense originally contemplated, they lose heart, and are willing to sacrifice what has been already laid out."

This passage is an interesting proof that human nature has not greatly changed in nineteen centuries, and that even the wonderful legal system of Rome, like the modern American system, did not cover all possible contingencies of dispute. How far an artist is justified in "exceeding the estimates" agreed upon at the outset of his labors, is a question still as frequently discussed as it was in the time of Augustus. Clients still protest that they are robbed when made to expend more than they anticipated, and doubtless artists then claimed, as they do to-day, that they may be so hampered as to destroy the artistic value of their work if a rigorous adherence to the bargain is insisted on.

It is, of course, difficult to say upon which side the blame most often rests. There are certainly artists in this time and land who are unskillful and who "commit depredations" upon the pockets of their clients without the excuse of giving him a superior piece of work in return for its extra cost. There are others who, while their artistic conscience is highly developed, have little pecuniary conscience; they honestly desire to give their client work of the highest quality, but they fail to remember that they are likewise bound to respect his pocket, and, if needful, to show him that he cannot have the best for the price he is willing to pay. On the other hand, clients too often insist on having the best, "regardless of cost," and afterward grumble about expense; or, a price once settled upon, they alter their demands without sufficiently considering that this may mean unavoidable increase in price. The task of a designer, whether his problem be to build a house or to lay out a park or garden, is a complicated one, involving outlays not only in final construction but in preparatory study, superintendence, and the office work of subordinates, which are rarely taken into account by the client, who thinks he has only to pay for stone and brick, soil and trees, and their actual manipulation. Every change from the plan first settled upon brings a new necessity for such outlays, even if it does not make needful the undoing of work already accomplished or the adoption of a scheme intrinsically more costly. "He keeps absolutely within his estimates if you do not change your mind," we heard a client say of a well-known architect not long ago, "but he is very extravagant if you change it." The truth is, that her change of mind had meant the need for renewed study on the architect's part, as well as more expensive features in the house. "The only way to get a house for the sum you have named," replied one of her hearers, "is to go abroad as soon as the contract is signed and not come back until the house is finished." The cause of many unfortunate disputes was certainly implied in this wise advice.

While there is reason, then, for insisting that some of our artists should be more conscientious as to expenditures, many clients also ought to reform their habits. There are a few rules which should be heeded by every person about to build or about to lay out a country place, and among them are these: Take plenty of time to decide, in consultation with the artist, just what it is you want. See that he understands you clearly, leaving no question of importance open for casual deciding as the work progresses. Then think no more about it, except to watch, if you will, lest, through misunderstanding or carelessness, something not in the bond is being done. Or, if you must change your mind, ascertain what the act will cost you and decide, before it is too late, whether you will assume the additional expense or not. Do not think that "a few little alterations" will be of no consequence. Probably those which seem little to you will not be little from the artist's point of view or in a pecuniary sense. If, however, you cannot decide upon what you want, hand over your house or your grounds to a reputable artist, name the sum you are willing to spend, and let him manage as he sees best—in which case you must not interfere at a later stage. And, finally, if you refuse to follow either of these modes of procedure, but give vague directions in the beginning, or recklessly change your mind from time to time, or else interfere when you have granted the artist a free hand to do as he likes, do not grumble at the sum you may eventually have to pay.

Indeterminate orders and loose bargains never result satisfactorily as regards either product or price, and it is the client's own fault if they are made. If the orders are clear, and the bargain hard and fast, and if then you are

asked for any important increase in price, the law will surely protect you as it would in a bargain of any other sort. But it is instructive to remember that in almost every case where client and artist have recently come into our courts, it is the artist whose claims have been sustained. When dealing with an artist many men, who are honorable and fair in other business matters, seem to think they have a right to get something for nothing, or to get more for a given price than was promised them. This proves that, as yet, we do not value art as we do other commodities, nor do we realize that the work of a man's brain has a marketable worth as fully entitled to respect as that of the work of his hands. If, indeed, we estimated art as it deserves—high above any commercial product—we should even feel willing to pay more for what we get than was at first decided. No artist, be he ever so conscientious, can, at the outset, tell to a dollar what a large and complicated piece of work will cost; and if we deprive him of the right to a reasonable margin of excess, we may fatally injure his work, and so commit a crime against him and against the art he practices. Vitruvius recognized this fact; although few clients to-day would be ready for a law which bade them stand ready to "add one-fourth more" to the contract price of a piece of architectural or landscape-gardening work if the artist demanded it; in fact, a much smaller increase often discourages them.

This may prove that modern men do not estimate art as highly as the ancients did; but, although human nature has not radically changed since the days of Augustus, the pecuniary conscience of artists has at least developed somewhat. It is still a common enough occurrence to find estimates exceeded, but seldom, we apprehend, to such an extent as fifty per cent., unless the client is wholly or partially at fault. If landscape-gardeners or architects or other artists were asked to fix a legal margin for such excess, they would probably be content with a smaller amount than the twenty-five per cent. of the contract sum. Vitruvius regarded this alleged Ephesian law as hard from the architect's point of view. Modern communities would regard it as very hard from the client's standpoint. We may conclude, then, that nineteen centuries have improved the architect more than the client, and that it is especially needful now for the client to look to his own development.

Nearly two years ago Professor W. W. Bailey complained in the columns of this paper (vol. ii., p. 610) that the linemen of some telegraph companies in Providence had been climbing the street-trees, and had mutilated them with the spikes on their feet, so as to invite attack from rot-fungus. Nobody seemed to have any authority to stop outrages of this sort, although Professor Bailey was informed in a later issue (vol. iii., p. 46) that the incident which aroused his feeling offered an admirable opportunity for testing the power of the citizen against the invasion of his rights. We allude to this matter again simply to introduce the statement that the last Legislature of Pennsylvania took pains to pass a law which provides directly for the recovery of damages to trees along the public highways by telegraph, telephone or electric-light companies. In the first section of this law it is enacted that when any company shall have erected poles and lines along any highway in the state it is lawful for the owner of the land adjoining, who may claim to be damaged by the maintenance of such lines by reason of the cutting of trees, whether in the highway or in the land adjoining, to petition the court of the county in which the damage has been committed; upon which petition the court shall appoint three citizens as viewers, who, being duly sworn to the faithful performance of their duty, shall assess the damage done to the petitioner and report the same to the court, which report shall, upon its presentation, be confirmed *nisi;* and if no appeal be entered to the same within ten days it shall be confirmed absolutely and judgment entered against the company. Lovers of trees in other states, who are contemplating additional legislation for their protection, would do well to study the text of this law, which was enacted on the 2d of June, 1891.

A Garden Pool.

One of the most important points to be considered in landscape-gardening is the relation of parts to the whole. A thing beautiful in itself may be so out of proportion to its surroundings that it fails in effect, either from being so large that it overpowers its neighborhood, or so small that it is insignificant. Constructed detail is particularly difficult to manage, so that its artificiality is not apparent enough to strike a false note in the general harmony. Rocks in composition are unruly, as too many unfortunate struggles to introduce them into parks and gardens bear witness. If isolated they are apt to be discordant, if grouped they are inclined to be cluttered; witness the rockeries in which so many country dwellers take pride. A cairn of stones interspersed with pockets of loam is a melancholy sight in winter, and in summer is too apt to be meaningless and intrusive, even when imperfectly concealed by masses of incongruous plants, sprinkled by a palpably unnatural fountain, and severely exiled, by trim cutting, from the lawn, of which it should form an integral part.

Appropriateness is too rarely considered in ornaments of this kind, which seldom bear refined relation to the things about them. Rough and informal constructions are particularly out of place in a purely formal system of lawn-planting, and are only to be endured where the nature of the ground suggests them, and enhances their beauty by suggesting that they are natural. We have selected the rocky basin, an illustration of which is to be found on page 439, because it gives an idea of fitting garden decoration, where the space is limited and the surroundings wild. The picturesque pool represented is a feature of a small terraced garden, built out from the rocky side of a steep hill that descends abruptly to the sea-shore of Massachusetts Bay. This terrace is approached from the level on which the house above it is built, by a rough stone stairway, that has for a balustrade a huge granite boulder, overgrown with Ivy, and surmounted with trees. Great rocks enclose the terrace on three sides, and down the almost perpendicular face of one of them trickles the thread-like stream that falls into the pool below. The overflow wanders away in a small grassy channel, along the edge of which tiny water-plants grow, and Cardinal-flowers blossom. In the basin a pink Water-lily is blooming, dainty dweller in a fairy home, and somewhere in the shadows a gold-fish has a lurking-place. On the stone curb a blue jug, and a Japanese drinking-vessel formed of a shell, with a handle of bamboo, give the requisite touch of human needs and uses to this lonely dell.

The little green-turfed terrace is encircled with flowers that thrive in this warm nook, where the morning sun shines hotly, and where its south-western rays are tempered by the shade of great forest-trees. So steep is the hill that the shining waters of the ocean are seen through the topmost branches of tall Oaks and Pines, while others stand far below. The brown seedy spike of a Dock-plant hangs out against the lichened crag, and forms a spot of rich color amid the prevailing gray, while all about, from crevices in the rocks, and from shady recesses beneath them, spring Ferns and Grasses, with wild flowers and picturesque weeds. Some young Sassafras-trees, or rather bushes, near by, which have sprung up of their own accord, have a particularly pleasing effect with their yellow-green leaves, and down the face of the rock straggles a Blackberry-vine, as perfect in outline and graceful in sweep as if it had been drawn by the hand of a Japanese artist, each cluster of finely serrated leaves having a distinct value against the mottled stony background, which also gives a

fine relief to the groups of flowers and ferns that cluster at the base of the pool.

In such a situation nothing showy should find place, but only those things which might naturally grow around a forest-spring. The little Cresses along the brook, the tender Forget-me-nots, the fine small Grasses, the water-weeds and ruby Lobelia, that have been wisely set here to enjoy the moisture, add to the wild-wood charm of the pool with its tinkling water.

Taste has gone hand in hand with nature and produced a lovely picture, delicate in detail, fine in color and grouping, harmonious in general composition. Minute the space is, almost as a Japanese garden, but the effect is dignified and poetic. It is not mere prettiness that charms, but the true artistic feeling with which the idea has been conceived and executed. The little scene touches and captivates, while gratifying all the senses with sound and sight and color, and soft touch of ocean breezes and of waving leaves.

The plate fails to show what is another feature of the real picture, a second semicircular terrace below, with Clematis-clad wall, to which one clambers by another flight of steps hewn in the rock to find more flowers and more lovely weeds and grasses, and a second space of well-mown turf, with a fine outlook on the tossing sea. From this a rugged path leads by devious ways to the beach below, where are boats and a yacht riding at anchor, and the wide stretch of the great deep, with white sails upon the surface and whiter clouds overhead.

A Fine Road.

ALTHOUGH in years gone by Chicago allowed a railway to be run along the lake-shore in the southern part of the city, there seems no danger that the mistake will be repeated, and, indeed, eastern cities might well emulate the care Chicago is now taking to make proper use of her water-fronts. The most noteworthy of recent improvements is the "Sheridan Road," which, starting from the end of the Lake Drive at the northern outskirts of the city, extends to Fort Sheridan, on the bluffs some twenty-five miles away. A correspondent of the *American Architect and Building News* recently wrote:

When first mentioned, this road was scarcely more than an idea, while by utilizing, to a certain extent, existing roads and condemning property, the general outlines of the scheme are now practically completed. The plan is to keep much of the picturesqueness of the country road, while a few of the conveniences of a city drive will be connected with it. The ditches, which heretofore have bordered the old road in many places, will have to disappear; in fact, have partially disappeared already. Drains are laid, the ditches are filled in and then sodded over, so that while the actual drive-way will not be made any wider than it is at present in many of the old roads, ample accommodations will be given for an occasional crowd upon the turf on either side. Space is gained in this way, and the amount of area liable to become dusty is lessened. Concrete sidewalks are being laid along the way, and before many years will, very probably, be laid most of the way to Chicago. . . . Where the original country road skirts the bluff quite closely, it has been converted into the Sheridan Road, but in places where it leads away from the lake new routes are being surveyed for the proposed drive. In tracts already opened up by it in the vicinity of Chicago marked advances are noticeable in the price of real estate, as well as a considerable amount of building. This growth has been gradual and healthy, and the homes being erected along the shore of the lake are of an extremely good class. . . . There is nothing wild or rugged about this shore of the great lake, but for quiet beauty this northward stretching coast has nothing to equal it in any way in the near vicinity of Chicago, and this locality must assuredly be destined to be the site of the finest summer houses around the city. One feature of this lake, which few realize who do not live by its side, is the immense size and amount of the shipping which passes daily up and down its northern shore. . . . At the terminus of the drive is Fort Sheridan, which, for the last three years, has been slowly assuming a somewhat settled aspect, till now this brand-new United States army fort is looked upon as one of the sights worth seeing in a visit to Chicago. It is situated on bluffs seventy-five or eighty feet above the lake, and with its winding ravines has at least much natural beauty to help out whatever improvements the Government may see fit to lay out on it. To reach the long Government pier a road was necessary, and, fortunately for the picturesqueness of the place, a more accessible one could be cut through one of the beautiful ravines, where a more gradual ascent could be made than up the steep bluff. This fine drive-way leading to the pier is now one of the features of the place.

Not only scattered semi-country homes, but "model villages," are already growing up along the Sheridan Road, laid out with broad tree-planted macadamized streets and controlled with a disregard of mere private eccentricity in taste, and a demand for general neatness and harmony of effect and for common comfort to which, one might have thought a few years ago, no Americans would ever submit. But, in truth, Americans are quick to appreciate improvement in any direction, even when it somewhat limits individual impulses, and there is no happier sign for the future well-being of our communities or the future aspect of our land than such carefully ordered villages as those which, in more than one of our western towns, are taking the place of those old-fashioned outskirts which have made the term suburban residences a by-word of reproach and a symbol of uncomfortable living in so many of our older localities. Such enterprises as the Sheridan Road prove, of course, the immense material as well as æsthetic value of a fine highway, and supply examples which can be used with telling effect elsewhere.

Notes on North American Trees.—XXVII.

THE number of changes in the names of our arborescent *Leguminosæ*, made necessary by the restoration of the oldest specific names, is not large.

The Clammy Locust is generally known as *Robinia viscosa*, the name given to it by Ventenat and published in 1803 in the "Description des Plantes Nouvelles et peu Connues Cultivées dans le Jardin de J. M. Cels," but it had been described, two years earlier, in England in the *Botanical Magazine* (t. 560) as *Robinia glutinosa*. This last name, which has every claim to priority, was taken up by Koch in his "Dendrologie," but has been neglected by other authors.

The character of the buds of Robinia is not explained in any of the published accounts of these trees which I have read, except in the "Flore Forestière" of A. Malhieu, who hints, in his third edition, published in 1877, at their structure and arrangement. Sir John Lubbock, who has recently published the result of his observations on the development and uses of the stipules of a number of plants, says that "the winter-bud of *Robinia Pseudacacia* is protected by three short, brown, triangular-pointed scales" (*Jour. Linn. Soc.*, xviii., 228). In reality, there is not one but three or four superposed buds under each petiole, and they are not covered individually by scales, but are sunk in the cavity under the base of the petiole and covered collectively by a thick scale-like coat which is lined on the inner surface with thick rusty brown tomentum, and which, in early spring, splits open to allow the growth of the upper and larger of the four buds, which is the only one that develops, although, if this is injured or destroyed, it is, no doubt, replaced by the next bud below it. The parts into which this bud-like covering splits remain on the base of the branches during the season. The subpetiolar buds are often accompanied by a supplementary supra-axillary naked bud, corresponding to the supra-axillary bud in Gleditsia which develops into a spine. In Robinia this supra-axillary bud, late in the season, sometimes produces a feeble branchlet, especially on vigorous shoots, which, probably, does not survive the first winter The apparently superfluous number of buds and their careful protection enables Robinia to pass uninjured through periods of excessive winter cold, and accounts for the ability of these trees to inhabit regions many degrees

north of their native home. *R. glutinosa* and *R. hispida* grow naturally only in the southern Alleghany Mountains, at the same altitude, and nearly at the same elevation, as *Magnolia Fraseri*, but are hardy several degrees farther north than that tree.

The nature of the buds of Cladrastis, which appear to have escaped the attention of botanists, also enables this tree to flourish many degrees north of the somewhat restricted region west of the southern Alleghany Mountains, which is its home. The buds are sub-petiolar, but I do not find that it has been explained that, instead of a single bud, there are under each leaf-stalk four, superposed and closely compressed together, forming by mutual pressure a rather thick cone, each bud being covered with thin lustrous scales. The lowest one is minute and rudimentary, and probably it is only the upper one which develops into a branch. If this should be injured, then perhaps the next one takes its place. The four sub-petiolar buds of Cladrastis serve to keep it separate from the Asiatic Maackia (united by Mr. Bentham with Cladrastis), which has solitary supra-petiolar buds, besides differing in habit, in inflorescence, in its accrescent persistent bud-scales, and in some floral particulars from the American tree, as has already been pointed out by Maximowicz.

The Jamaica Dogwood, a fine tropical tree which occurs on the keys of southern Florida, was described by Linnæus in the first edition of the "Species Plantarum" as *Erythrina Piscipula*. Later he recognized it was not an Erythrina, and made a new genus, Piscidia, to receive it, changing, however, the specific name in the second edition of the "Species Plantarum" from Piscidia to Erythrina. The successors of Linnæus have written *Piscidia Erythrina*, but if the oldest specific name given to a plant by Linnæus, or by any subsequent author, is the name by which the plant is to be known, then that of the Jamaica Dogwood must be *Piscidia Piscipula*.

The synonymy of the Water Locust is confusing. It was first described by Linnæus in the first edition of the "Species Plantarum" as a variety of *Gleditsia triacanthos*. Miller, in the eighth edition of his Dictionary (1768), called it *G. inermis*, which would be the oldest name for the Water Locust had it not been already appropriated by Linnæus in the second edition of the "Species" (1763), in which there is a *G. inermis* taken up from a plant of Duhamel's which Mr. Bentham (*Trans. Linn. Soc.*, xxx., 557) was probably right in considering the spineless form of *G. triacanthos*, although Duhamel himself supposed that it might be the *Acacia Javanica* of Plukenet ("Phyt.," t. 123, f. 3). The identity of this plant was further confused by Linnæus referring to it Miller's figure ("Icon.," t. 5), which represents *Calliandra Houstoni*, a tropical American plant, which, Mr. Bentham remarks, could "only have been quoted by Linnæus at second hand or through some inadvertence." In any case, the *G. inermis* of the second edition of the "Species" cannot refer to the Water Locust, which still appeared there as a variety of *G. triacanthos*, so that Miller's name, being a synonym, is not available, and the next oldest name, that of Marshall (1785), *G. aquatica*, will have to be adopted. Fortunately, the name is the best of all those which have been given to this tree, which grows in water or in very wet places.

In the spelling of the generic name I have followed Linnæus in writing Gleditsia, although most modern authors have changed his name to Gleditschia. *C. S. Sargent.*

New or Little-known Plants.

Cereus (Pilocereus) Sargentianus.

THIS plant has eight or more stems from the same base, the sterile stems two to five feet tall, five or six angled with obtuse ribs, separated by broad, deep intervals; the woolly areolæ closely set and touching each other on the ribs, the gray spines stout, straight, one-fourth to three-fourths of an inch long, in clusters of ten or more; the flower-bearing stems ten to fifteen feet tall, erect, five or six angled, intervals usually shallow, the ribs closely set with woolly oblong areolæ, each bearing about fifty long, flexuous, grayish or white spines which almost hide the small inconspicuous flowers.

The flower is of a delicate shade between rose-pink and flesh-color, an inch long and less than an inch across; petals about twenty-four in number, thirteen scales in the ovary; anthers yellow, filaments, style and stigmata white.

The Indian name of this Old-man Cactus is *Carambuya* or *Garambulla*, and it is called by some *Hombre viejo* or *Cabeza vieja*, according to Brandegee, who found it from Comondu to San Quintin, Lower California.

I have referred this plant hitherto to *Cereus Schottii*, Engelm. (vide Garden and Forest, iii., 439), and Brandegee (*Proc. Cal. Acad.*, 2d ser., ii., 163) has referred to it by the same name.

I first found it near San Quintin, Lower California, in 1886. The fruit I have not seen, but it is said to be edible, without spines, red, and attaining a much larger size than the fruit of *C. Schottii*, as is evident in the illustration (see page 437), from a photograph taken by Messrs. Roscoe Howard and Russell Gannis.

The plant differs also in the number and characters of the spines, and will probably prove to be a distinct species. I therefore venture to name it provisionally for Professor C. S. Sargent, whose interest in the Mexican flora is well known.

San Diego, Cal. *C. R. Orcutt.*

Foreign Correspondence.

London Letter.

THE most interesting event of the week in the open-air garden is the flowering of *Lilium Parkmanni* in the Knap Hill nursery, Woking, where only it can be seen. By reputation this Lily is known to all who take an interest in Lilies, but comparatively few have seen it in bloom, as it flowers when no unusual display attracts visitors to the great Surrey nursery. As every Lily-grower knows, we are indebted to America for this magnificent Lily, considered by many the queen of the whole family, and it is a singular fact that none of our hybridists have obtained such successful results as did Mr. Parkman, though they have tried over and over again to raise a similar hybrid between *L. auratum* and *L. speciosum*, which are the parents of Parkman's Lily. Neither is it likely that this Lily will ever become common, owing to the slow way in which it increases. For thirteen years has Mr. Anthony Waterer been trying to make the most of the four bulbs he bought from the raiser at the highest figure that has ever been paid for a hardy herbaceous plant. Those who do not know what Parkman's Lily is like must imagine a very large *L. auratum* flower, a foot across from tip to tip of the petals, each banded like auratum with yellow and stained with the richest carmine-crimson and broadly edged with white. Every Lily specialist here is eagerly waiting for its distribution, and, no doubt, it will then soon find its way back to the land of its birth.

An uncommonly successful meeting was held this week by the Royal Horticultural Society at Westminster, and quite a number of novelties were placed before the committees. Gladioli from Kelway, and Dahlias from various growers, were the special features, but several other interesting plants were there, and especially Orchids. There seems to be now a continuous succession of hybrid Orchids, for at every meeting one sees new ones. The most important new hybrid shown on this occasion was from Messrs. Veitch. This was a Lælio-Cattleya named Nyssa, a cross between *Lælia* (*Cattleya*) *crispa* and *C. labiata*, var. *Warsceiczii*. The progeny is intermediate, both in growth and flower, the latter being somewhat larger than those of *L. crispa*. The sepals are a delicate mauve and spread out widely; the labellum is larger than in *L. crispa* and quite shows the dilation of that of *C. labiata*; the color is an intensely deep purple-crimson, surrounding an in-

terior blotch of golden-yellow, and with a well-defined crisp edging of white. Altogether, the flowers recall the features of the rare *C. Exoniensis*, one of the earliest hybrid Orchids of Dominy's. It is looked upon as one of Mr. Seden's chief successes in hybridizing. Another hybrid Cattleya was named *C. Behrensiana*, from Messrs. Sander, of St. Albans. It is a cross between *L. elegans* and *C.*

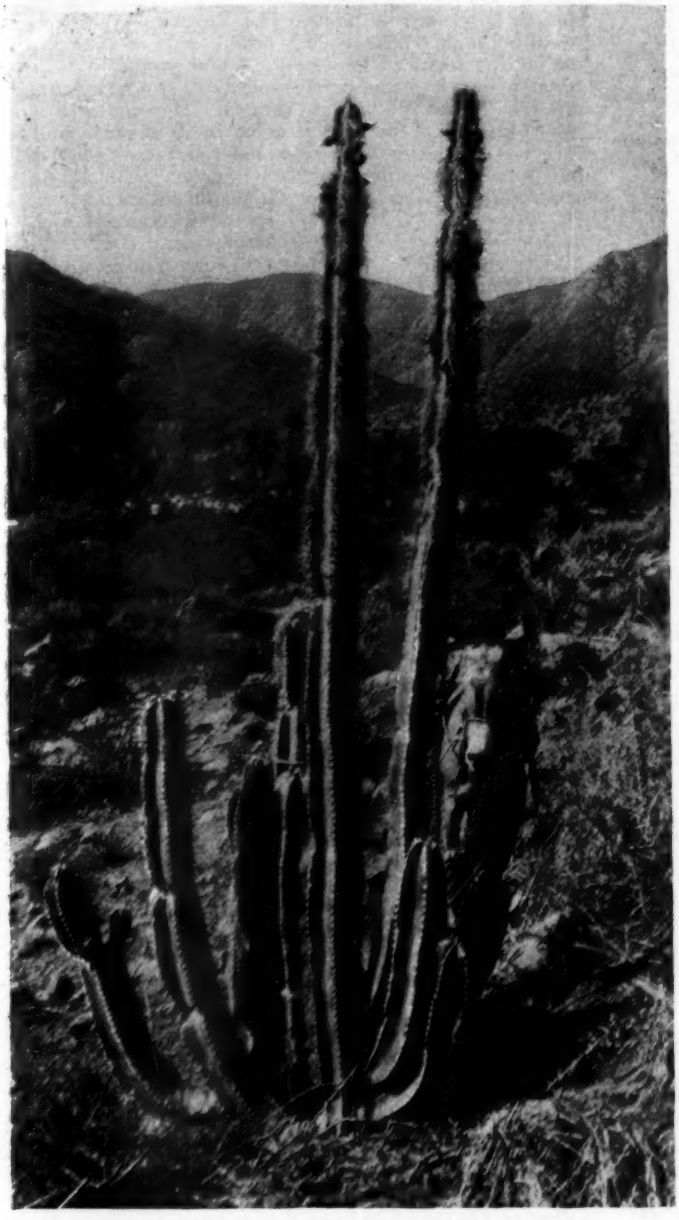

Fig. 69.—Cereus (Pilocereus) Sargentianus.—See page 436.

Loddigesi. The growth is similar to that of *L. elegans*, but the leaves are broader and shorter. The flower is as large as those of the latter; sepals very pale lilac; lip broad, amethyst-crimson on the lower lobe, white on the incurved upper lobes. Though not such a strikingly distinct hybrid as that from Messrs. Veitch, it was much admired. A third hybrid Orchid was *Masdevallia Measuresiana*, a pretty and interesting little plant obtained by crossing *M. Tovarensis* with *M. amabilis*. The flowers are about the size of those of the latter, and with attenuated sepals which are white striped and clouded with violet-purple, and the influence of *M. Tovarensis* is seen by the several flowers it carries on each spike. *Cypripedium apiculatum*, a cross between *C. Boxalli* and *C. barbatum*, was from Mr. Palmer, of Reading. It has the mottled foliage of *C. barbatum* and the flower of *C. Boxalli*, rendered darker by the crossing, and with spots on the lateral sepals, but the dorsal sepal is much reflexed, which detracts from the symmetry of the flower, and is considered a fault by orchidists.

A supposed hybrid named *C. leucochilum*, between *C. Godefroyæ* and *C. barbatulum*, was shown, but the evidence of the cross was not clear, and so may be passed over. Besides the hybrids there were shown *Dendrobium Phalænopsis*, var. *Statterianum*, a really splendid variety, much superior to the type, inasmuch as the spike is longer, the flower larger and more deeply and richly colored. The broad sepals are a purple-crimson, and the labellum many shades deeper. *Sobralia leucoxantha*, with the growth of *S. macrantha*, has flowers five inches across, sepals snow-white, lip broad, frilled at the margins, and of a rich golden-yellow. It is one of the loveliest of all the species and a rival to the rare *S. xantholeuca*. It came from Messrs. Seeger & Tropp. *Cattleya amanda*, also known as *C. Rothschildiana*, is a pretty Orchid at this season, supposed to be a natural hybrid, and reminds one of *C. maxima*, having sepals of a pale rose-pink, with a deeper lip with purple veins. A very uncommon looking Orchid, under the name of *Zygopetalum grandiflorum*, came from Messrs. Shuttleworth & Co. It has the habit of growth of one of the larger Maxillaria and one-flowered spikes. The flower is three inches across, pointed, broad sepals, pale green, striped with purplish brown, and a large labellum, white, lined with purple.

The Gladioli from Messrs. Kelway, numbering hundreds of spikes, made the usual magnificent display, though, owing to the cold wet season, they were not as fine as in former years. Many new seedlings were submitted to the committee, but only a few were distinguished by awards of merit, because it is so difficult to discern the difference between the new and the old kinds among the Gandavensis section, now that the climax of perfection has been reached as regards size of spike, shape and size of individual flowers, and brilliancy of coloring. A smaller collection of Lemoine's hybrids, which Messrs. Kelway have at length taken in hand, comprised some wonderfully fine sorts, and it is in this section that we must in future look for progressive improvement, for, though they are at present inferior in spike and bloom to the Gandavensis tribe, they combine such striking contrasts of colors that they will probably prove a far more valuable race of garden-plants, since they are so much hardier and may be left in the open ground here throughout the year, which, to amateurs, is a great consideration. There has been such a rapid improvement made with this race that Lemoine's original seedlings are rarely shown now, though the features of those first hybrids are plainly discernible in newer sorts that have been again crossed with the finest of the Gandavensis type. The first bright, clear yellow Gladiolus that I have seen was among Kelway's new seedlings, and others had those combinations of yellow and crimsons, pinks and scarlets, that render them so distinct from the ordinary Gladioli.

The Dahlias, like the Gladioli, were in strong force, and a great number of new, or so-called new, sorts were placed before the committee, especially novelties in the Cactus-

flowered section. Messrs. Cannell, of Swanley, seem to be leading in the race for novelty, and certainly some of their seedlings are of great beauty, and, for the most part, distinct from older kinds. They had a few new colors representing the true original Cactus Dahlia (*D. Juarezii*), not the nondescript coarse-flowered sorts that pass as Cactus-flowered Dahlias. Their new Swanley Cactus is a counterpart of the Juarez Cactus, having the same semi-quilled florets, but of a much more brilliant scarlet. Their other varieties of Cactus—Ernest Carronel, magenta-crimson; Robert Cannell, bright carmine; Oban, yellowish, flushed with plum-purple; and Eynsford Gem, purple-crimson—were among the finest of a remarkable collection of Cactus Dahlias. Other great Dahlia-growers, such as Keynes, of Salisbury, and Phippen, of Reading, had large collections of single show and pompon varieties, but they did not attract such attention as the group of new Tom Thumb single Dahlias, from Cheat, of Crowley, who has acquired the stock of these remarkable pigmy Dahlias from the raiser, Mr. Girdlestone, the well-known rosarian. This dwarf race of Dahlias grows at the tallest only eighteen inches high, and are sturdy in growth, and are very free-flowering. For massing in beds on lawns they are of especial value, as they require no supports. There is nothing extraordinary about the flowers, which are all single, but there is no knowing where this new break may lead. They are different from the dwarf double varieties that have been grown during recent years.

Some interesting Lilies from Messrs. Low were noteworthy, especially the variety of *Lilium Wallichianum* named Superbum. It has flowers in shape like *L. longiflorum*, but in this variety they were much larger. They are white, and colored on the inside with pale yellow. The plant grows some three feet high. Another fine Lily from the same exhibitor was *L. Nepalense*, also from northern India. This is a Turk's-cap Lily with large flowers of a blood-red color, with the petals broadly tipped with yellowish green. It is a striking plant, and still very rare in cultivation. Some slight forms of *L. longiflorum*, under the names of Magnificum and Giganteum, were shown, but they were not superior to the variety Takesima, which was shown grandly in a mass, and which were described last week.

Other bulbous plants were *Crinum Powelli*, the very fine hybrid between *C. Moorei* and *C. Capense*. It carries a stout flower-stem, bearing from nine to twelve flowers of a lovely rose-pink, and nearly as large as in *C. Moorei*. It has proved quite as hardy as *C. Capense*, and is, therefore, an invaluable addition to our open-air flowers. This was from Sir Trevor Lawrence, who also showed the hybrid *Cyrtanthus rosea*, interesting and beautiful, but not so fine as the old *Vallota purpurea*.

Among the trees and shrubs from Messrs. Veitch the committee selected *Cupressus Arizonica* as worthy of a certificate of merit. It reminds one of *C. macrocarpa*, but is more glaucous, and it is evidently an elegant shrub, and the fact that it has proved quite hardy at Coombe Wood, in Surrey, enhances its value. *Retinospora squarrosa sulphurea*, with slightly yellowish foliage, and *Cupressus Lawsoniana versicolor*, with ill-defined yellowish variegation, were two other novelties from the same exhibitors, who also had a fine gathering of the beautiful *Eucryphia pinnatifolia* alluded to last week. The beautiful new hybrid, *Hypericum Moserianum*, was shown in fine flower by Mr. Anthony Waterer, of Knap Hill, who thinks so highly of it that he is growing it on a large scale in his nursery since he has proved its thorough hardiness and its free-flowering character and elegant growth. Under the name of *Catalpa Himalayensis* Messrs. Veitch have in flower a variety that flowers habitually when only a few feet high. In other respects it is not different from *C. bignonioides*, so far as I can judge. The name may be wrong, but perhaps this variety is cultivated in the Arnold Arboretum. If so, it would be interesting to know what it really is.

London. *W. Goldring.*

Cultural Department.

Iris reticulata and its Allies.

About twenty-five years ago the typical form of *Iris reticulata* with violet-blue flowers was introduced into cultivation through the agency of English and Russian botanists. It is a very hardy plant, flowering in early spring, and its fresh-colored flowers, with narrow falls and standards, are very striking. The Reverend G. T. Nelson, of Aldborough, whose name is prominently associated with the improvement of hardy plants, first produced, through constant sowings and careful selection, two new forms of this Iris, named Major and Cœrulea. The first is a more robust plant than the type, stronger in all its parts, and the divisions of the flower are broader and more spreading, thus presenting a larger surface of color. The second resembles the type except that the plants are cœrulean blue. Dr. Edward Regel, not long after the introduction of *I. reticulata*, introduced the deep purple-flowered *I. reticulata Krelagi*, with rather dull-colored flowers. Forms, however, raised from seed of this and others obtained from Koordistan produced brighter-colored flowers. About the same time *I. reticulata cyanea* was introduced by Haage & Schmidt, also from the Caucasus. It has a smaller flower than the last, but the small size is more than compensated by its lovely color, the falls being dark blue, with an orange blotch, the standard pale sky-blue. These are all the forms of *I. reticulata* proper, its specific name, by the way, being derived from the netted outer coat of the bulb.

It appears, however, that the type in descending from the lofty heights of the Caucasus plain eastward to Persia and southward to Palestine has undergone material changes in the form and color of the flowers, and that from the original *I. reticulata* have been developed by gradual evolution species of greater beauty and of greater value to the horticulturists than *I. reticulata*. Boissier, the great botanist, brought home from Mount Gherizin, in Palestine, thirty years ago, some bulbs of the lovely *I. Histrio*. This is an early-flowered plant, producing in mild winters its flowers as early as January in Germany. It is distinguished from *I. reticulata* by the broader blade of the falls, with brilliant ultramarine blotches on a white ground. In later years *I. Vartana* has been introduced through the exertions of Professor Foster, of Cambridge, and of Dr. Vartan, of Nazareth. This plant produces here greenish blue flowers in November. Fifteen years ago Mrs. Danford, during a hunting trip which she made with her husband in the Sicilian Taurus, discovered the small, but brilliantly flowered, *I. Danfordiæ*, which three years ago was found again in large quantities by Sintinis in northern Koordistan. These plants have succeeded well at Baden-Baden, and, in spite of snow and ice, have flowered in February and March, or when they have been potted and kept in the greenhouse they have flowered as early as November. Later a variety of *I. Danfordiæ*, or perhaps a distinct species, *I. Bornmüleri*, was found by Bornmüler in another part of Armenia, and sent to Baden-Baden. It differs from *I. Danfordiæ* in its more robust growth, in its broader floral segments, with a green stripe on the claws, the green color being of a slightly deeper shade of yellow.

Through the kindness of American missionaries in Armenia, Professor Foster received a number of other forms of Iris, and in search of these I was fortunate enough to introduce a large quantity of *I. Bakeriana*, *I. sophenensis* and *I. histrioides*. *I. Bakeriana* has sky-blue standards, with white falls tipped and penciled with deep indigo-blue, with an indigo-colored blade marked with orange. The flower is very sweet-scented, and opens toward the end of February. The flowers of *I. sophenensis* appear in all shades of color, from almost white to mauve-purple and metallic-red. It grows well and flowers early. *I. histrioides* is, perhaps, the prettiest of all the group, appearing in the form and color of the flowers almost intermediate between *I. reticulata* and *I. Histrio*. This also flowers very early,

and the flowers present a large surface of the brightest ultramarine-blue shading, or varying in some individuals to violet, and in others to a paler shade. All these plants are very easy to cultivate, and, when better known, are sure to become general favorites. In America, where in early spring-time heavy snow may occur, it will be necessary to plant them in frames, or to make such arrangements that when they are in flower they may be protected. At Baden-Baden they are planted in borders along the bottom of walls, where they can be kept safe from the destroying influence of heavy or wet snows by leaning mats against the wall over the beds.

Baden-Baden. *Max Leichtlin.*

Fig. 70.—A Garden Pool.—See page 434.

Keeping Fruit in Winter.

A WRITER is quoted as objecting to the practice of gathering apples for keeping "as soon as the pips begin to turn brown." He says apples gathered at this stage "do not keep as well, or average of so good quality." Certainly they do not. An apple makes a noticeable portion of its growth—often as much as one-fourth—while its seeds are coloring. But, on the other hand, the keeping of late-ripening apples is greatly lengthened by gathering them as soon as the seeds are fully colored. Up to that time the fruit improves on the tree. After that it deteriorates, so far as keeping is concerned, and, with some varieties, it deteriorates rapidly, so that winter fruit becomes in a few days fall fruit.

The art of handling fruit for keeping is very imperfectly understood, both as regards principles and practice. The season of many of our fruits is capable of being much lengthened in the hands of growers and dealers who are willing to learn and make use of the principles involved. In the first place, so far as Nature's purpose is concerned, the external coverings of the true fruit—that is, the seed—exists primarily for the sake of the seed itself, and only secondarily for its envelopes, which are the parts that give it its chief value for human use. As soon as the fruit and its seeds are ripe the fleshy exterior part begins to decay, and what we call ripening or maturing are only primary stages of that process, which is to release the seed, so that it may grow into a new plant.

After the fruit is carefully gathered, the whole question of keeping resolves itself into a question of temperature, but with due attention also to moisture. Pears, apples and grapes require a low and uniform temperature, and proper protection from fungous attacks. Aside from the latter danger, which may be favored by dampness, a saturated atmosphere is not objectionable; but care must be taken not to allow cold fruit to be taken into a warm atmosphere, producing that deposit of visible moisture upon its surface which is erroneously called sweating. In such cases it is not so much the moisture itself that harms the fruit as it is the moldiness which is apt to ensue. Apples can be well preserved in very damp cellars if these points are kept in view. In fact, a cellar with a spring in it is thought by many fruit-growers to be specially favorable to the perfect keeping of apples. In Russia it is a custom to preserve apples fresh in cold water; and the late Charles Gibb, of Abbotsford, Quebec, once told me of some very fine Fameuse apples which he found on sale in April, and which, he was told, had been part of the cargo of a canal-boat that had sunk and been frozen in and had just been raised. The Fameuse can rarely be kept in air much beyond the first of February.

The temperature of a fruit-cellar is best when kept as near to the congealing temperature of the fruit as possible. It is not safe to freeze so watery a fruit as the grape; but apples and pears can be frozen without injury, if slowly thawed again in the dark. I am not quite sure of the latter condition being essential, as I have had apples that had been slowly frozen, and as slowly thawed, in a light cellar, come out of the trial apparently uninjured.

But, unquestionably, an even temperature, near to freezing, is the best. Even this, however, is of small avail toward good keeping if the fruit does not go into its cold storage in

perfect order, and at the right stage of its existence. That stage is reached, in apples and pears, as soon as the seeds are fully colored. Fruit designed for long keeping should be gathered early in the day, or in cloudy weather. A barrel of sun-heated apples, even if put at once into a cool cellar, has lost greatly in keeping quality. If fruit must be gathered in the heat of a sunny day let it be in baskets, which are to be kept under airy cover until they are well cooled before they are placed in the cellar.

For the best results gathering and assorting ought to be simultaneous; but in a large orchard, when careful hands are scarce, this is not possible, and the best alternative is a large and airy sorting shed, where the work can be deliberately done by skilled hands. I prefer round-bottomed half-bushel baskets, with drop handles, for use in gathering and assorting. It takes a good many of them in a busy time, but in the end they are economical. They are easily handled, and will not be slung around, as bushel baskets with side handles are sure to be, to the great injury of their contents. The small baskets can be put down into the barrel and emptied without bruising their contents in the least. Hand-barrows for two men are much better than wheel-barrows. A stone boat answers well on smooth, level ground.

As an evidence of the value of careful attention to all the points above referred to, I may be allowed to say that our chief winter apple in northern New England is the Wealthy. Observing all these rules, I find that I have not the least difficulty in keeping it firm, fresh and free from decay up to April, while less careful neighbors (and growers generally) decry it as merely a fall apple. By similar care the Gravenstein, grown in southern Maine, is found in the Boston market all winter in prime order.

Newport, Vt. *T. H. Hoskins.*

Dracænas.

THESE useful plants are generally easy to grow; they often have bright foliage, and all are graceful in habit. In a majority of instances they are most satisfactory when grown moderately warm, though some varieties do well in a cool house. Moderately light soil is most suitable, but it should be well enriched with some old manure, and the addition of some bone-dust will be beneficial.

They are readily multiplied by laying the canes in sand or moss, or a combination of both, in a warm house, and young plants will be produced from nearly every joint. For large specimens it is best to root the top of an old plant by making an incision in the stem, and then covering that portion with moss in order to induce root-growth. By this means a specimen may be secured with large foliage close down to the pot.

While most of the varieties and species of Dracænas require plenty of light at all times, yet it is better for many of the more tender ones to have a slight shade during the summer, else some of the foliage may be injured. During the past ten years or so there have been many fine hybrids introduced, but there are excellent varieties among the older ones, and as these are more easily procured, they will be the ones chiefly spoken of in these notes.

Prominent among these older sorts is *D. amabilis*, which has leaves nearly two feet long and from four to five inches wide, the ground color bright green and the central leaves suffused with creamy white and frequently tinted with pink. *D. Cooperii* is another fine variety, which probably originated from the well-known *D. terminalis*, as, in fact, have a large number of good varieties. The leaves of *D. Cooperii* are, however, much broader than those of *D. terminalis* and are gracefully recurved, the color being reddish bronze, while the young leaves are frequently bright red.

D. Chelsoni is remarkably handsome when well grown, the leaves being large, dark green, and marked with crimson.

D. ferrea is another fine variety that has long been known in gardens and is of rather upright habit, with leaves about one foot long and purplish red in color. This variety and *D. terminalis* are among the most satisfactory kinds, with colored foliage for vases and other out-door decorations.

D. gracilis is not often seen now, though well deserving of a place in any collection. It is of slender habit, and the stem is thickly clothed with narrow, dark green leaves, the latter being edged with a narrow border of dull crimson.

D. Dennisonii is a handsome dwarf variety, and has broad purplish leaves that are about one foot long. The leaves of this variety are closely arranged on the stem, and it makes a very compact little specimen.

D. magnifica is quite a contrast in size with the preceding, the leaves of this variety being often eight to ten inches wide and two feet long; the color being pinkish bronze with darker petioles.

Still another fine one among the large growers is *D. Mooreana*, in size somewhat similar to the preceding, but much darker in color.

D. indivisa Veitchii and *D. indivisa atropurpurea* are two decidedly ornamental forms of this popular species, and are admirable for out-door planting or for conservatory decoration. They both have the long and graceful leaves of the type, but differ therefrom in color, *D. Veitchii* having a reddish midrib, and *D. atropurpurea* has a purplish flush about the base of the leaves and a darker midrib than its companion.

D. fragrans is still reckoned among the popular decorative plants, its broad dark green leaves having a very pleasing effect, while the two variegated forms of this species are both worthy of cultivation, *D. variegata* having most of its creamy yellow color about the margin, while that of *D. Lindeni* is chiefly found in the central part of the leaves.

It may be noted, too, that *D. indivisa* also has produced variegated forms, that known as *D. Doucetii* being, perhaps, the prettiest.

D. umbraculifera is a somewhat unusual species, but makes a fine specimen, the narrow leaves being very dark green and glossy, and very closely arranged on the stem, from which they diverge in umbrella form.

This species is, however, rather difficult to increase, as it makes a stem very slowly.

Holmesburg, Pa. *W. H. Taplin.*

Notes on American Plants.

Chelone Lyoni, one of the Turtle Heads, a native of the southern states, is in flower the last of August. The plant is rather stocky, about fifteen inches high, and bears, in long succession, handsome rose-purple flowers an inch long. The numerous leaves are oblong-ovate and very dark green.

Sedum telephoides, from the same locality, is a useful plant to cover rockwork, and will live almost on air alone. It grows on dry rocks. Its height is about one foot, and the thick, fleshy leaves, as well as the stems, have a purplish tinge. The not very attractive flowers are borne in small cymes, and are of a pale flesh-color. This species, with *S. Telephium* (Common Live-for-ever), could be grown in places where few, or no other, plants of their size would live. Their foliage remains fresh the entire season, and the thick compound cymes of purple flowers of the last are certainly quite attractive.

Our North American Gentians, of which there are said to be fifty species and varieties, are for the most part worth cultivating. They do not transplant so well as most of our wild flowers, but if the soil is light and moist they generally establish themselves by the second year. They are late-flowering plants and come at the season when they are most needed.

The Soapwort Gentian (*G. saponaria*) has proven with us a good species for cultivation, and its pale blue flowers appear at nearly the same season with those of the White Gentian (*G. alba*), making a fitting companion to it. Both do well in either sun or thin shade, in a light moist soil.

G. linearis is found in swamps, and is a good species to plant in artificial bogs, in not too wet or sunny portions, but in partial shade and elevated, so as not to be wet. It likes a peaty soil. It has simple, slender, leafy stems, often over two feet high, terminating in three or more blue flowers an inch or thereabout in length.

Few of our wild flowers surpass the Fringed Gentian (*G. crinata*) in attractiveness, but, unfortunately, it is a biennial and a difficult plant to grow.

G. Amarella, var. *acuta*, is a boreal variety often only six inches high, with pale blue flowers half an inch long. We have never attempted its cultivation, but, no doubt, it should be treated as an alpine.

Charlotte, Vt. *F. H. Horsford.*

Hybridizing the Sweet Pea.

THERE are several ways of producing new varieties of Sweet Peas besides hybridizing. Special strains may be developed by selection. Old varieties may be increased in size. Occasional sports will hold good from year to year. The striped sorts have a way of ranging back and forth from delicate markings, and even pure white, to solid colors. For instance, the Senator, a noble flower in dark stripes, and of the new, large form, has, with me, this year produced a solid purple blossom, which, if it can be held, is an acquisition. Since Eckford himself leaves many hybrids without a name,

other experimenters ought to be cautious about claiming anything new.

Hybridizing must be the short and sure road to really new varieties of merit. I can only speak from a short experience, but my experiments this year seem to warrant more confidence than those of last year.

Each Sweet Pea blossom is an independent and self-fertilizing flower. The keel is a sac containing the stamens and pistil, and in healthy blossoms the latter rarely are exposed. So jealously does each blossom fertilize itself that it sheds its pollen when about half-open, and the sac at the upper end draws snugly up around the anthers, pressing them closely about the stigma. Cross-fertilization, even by bees, is almost impossible. The bumble-bee comes, but he works down at the base of the wings. No member of the Pulse family appears to be in less danger of mixing than the Sweet Pea.

But here is a neat and difficult opportunity for artificial hybridizing. My experiments in trying to cross them after the blossoms were open had no effect. This year I have worked on the buds. They must be taken before they have pollinated, and to mutilate the bud so early is rough treatment. The few pods which I have secured this year are a modest but much-prized return for the patient labor expended. My judgment now is that it is preferable to take the lowest bud on the stem, at just the right stage, and remove the others, to give all the strength to one. Delicately open the sac and cut away the stamens. Let the bud stand till it would naturally pollinate, and then cross-fertilize as you wish. Better than using a pencil-brush I have found that by tearing away the standard and wings of the blossom whose pollen you wanted, you could lay open the sac gently with a penknife, and, like an oyster on half-shell, you had the pollen in a handy vessel and could press it on to the stigma of the other. Judgment must be used as to the time to transfer the pollen. Open the bud in the early morning, and perhaps by nine or ten o'clock it is sufficiently advanced.

It may be that in this country the results will compare unfavorably with Eckford's, but further experiments are worth making. Great possibilities are in this beautiful and fragrant flower. Who will get the first real yellow Sweet Pea?

Ellington, Conn. *W. T. Hutchins.*

Correspondence.

Gardening on the Shores of Buzzards Bay.

To the Editor of GARDEN AND FOREST:

Sir,—It may be well to state, for the benefit of those persons who have an inaccurate idea of the situation of Buzzards Bay, or a mistaken or vague idea of the character of the country about it, that the bay is, in shape, like a horseshoe. It opens on the ocean only to the south. The butt of Cape Cod forms the north-east and east side, and lies between the bay and the Atlantic. The land hereabout is not a level waste of drifting white sand; it is, on the contrary, a rolling country, rising to considerable heights, mostly covered with wood, and full of lakes, ponds and brooks. It offers to lovers of gardening—who are but beginning to appreciate it—great advantages over those undertaking the art in most other parts of our country; and one who is familiar with it foresees that the number and beauty of its cultivated grounds, and the variety and rarity of the trees, shrubs and flowers to be found in them, will one day make it famous.

This land of promise, like England, Japan and the shores of Puget Sound, lies near a warm ocean current, which regulates the temperature and modifies the extremes of heat and cold, and no other part of our country, except the Pacific coast, has so equable a temperature and so great a rainfall; while, besides innumerable lakes, ponds and brooks, inexhaustible supplies of water may be had from underground.

It is true that much—though by no means all—of the soil is poor. Sometimes it is of sand and nothing else; but meadows, pockets of loam, and large muck-beds furnish plenty of other material. Where soil is lacking it can be made or imported, if need be, but climate and rainfall can neither be produced nor bought. Besides, sand is a much better basis than either gravel or clay, and is a most useful, often an essential, constituent; and without admixture of any other soil will convey to a plant all the artificial food that may be supplied. The loss of nutriment by leaching through sand is a theory with the weight of evidence against it.

That the neighborhood—indeed, the whole of Cape Cod and Nantucket—was once covered with noble trees, is matter of record; that it will and does now support such is matter of demonstration; for within a short drive of Wareham are hundreds of acres of tall forest, containing scores of tall trees, giving convincing proof of the capability of the soil. The Atlantic coast of Massachusetts is not fended from the cold northerly winds from seaward; but here the Cape intervenes, and the wooded shores of Buzzards Bay afford a local protection which is invaluable. Here are found, then, the best climate, the maximum of water-supply and shelter, and we have soil, or the means of making it.

The aim of good taste should doubtless be to choose, for the purpose of giving pleasure, only those trees and shrubs that grow cheerfully and thrive; and while great variety and rare specimens add much to the interest of a collection, experiments with doubtful exotics are inconsistent with that sense of rest, harmony and gladness which one would wish to produce in a natural garden. At the same time, it cannot be denied that there is a fascination in trying these experiments; nor can it be denied that English gardens, for instance, have a quality which we can never get, because we have not the plants that furnish them so richly.

Even here, on and about Buzzards Bay, I doubt if the English Laurel—which is a necessary part, singly and in masses, of every cottage-yard and every lawn in England—can be left in the ground the year round. The fantastic Chili Pine, which there breaks the sky-line so picturesquely, and emphasizes the quiet order of the garden, probably cannot, but the English Holly and the Cedar of Lebanon, on the other hand, undoubtedly can, for both have survived more than one winter and summer here; so has, indeed, the Exmouth Magnolia, the most brilliant in leaf of any of them, but it is not thrifty. About Boston even the American Holly is grown always with difficulty, and rarely with success; here it is native, and is delightful in the vigor of its green when other leaves are gone, and in its brilliant decoration of scarlet berries.

Here two most beautiful and much-neglected trees, the Tupelo and Sassafras, are in their own home. A real Tupelo cannot be had from a nursery—a nursery-bred tree has neither character nor foliage. The only way is to choose in some pasture or upland an orthodox-looking Tupelo, not over-large—one that has decidedly a look and way of its own—and then, with a long-bladed narrow post spade, to cut a circle round the tree, severing every root on the way, and to drive the spade through under the tree, dividing the down-going roots as well. Wait a year, and then in the spring move your tree. Let the new hole be dug four feet deep, even though the same soil is replaced; fertilize it liberally, for which purpose wood-ashes are excellent; and by and by you will have a tree of some interesting and beautiful shape, covered with more leaves than can be found in the same space on any tree, each leaf as rich in color and lustrous as that of an English Holly, and the whole tree in autumn a jewel of deep and brilliant color.

The Sassafras, with the liveliness given by fresh color and variety in the form and motion of the leaves, is a charming tree all summer; and, as every one knows, its leaves turn with great beauty in the autumn. It may adopt, or be made to adopt, other forms than that of a succession of parasol-like layers of leaves on a slender trunk, which is its natural habit. If cut down close, it will sprout into a bush; suckers will appear on every side until a thicket appears, rising everywhere to the middle, a natural bit of artificial work; or, again, a good-sized stem may be cut five or six feet from the ground, and the tree forced to grow so freely that the branches droop and the whole becomes a pile of charming foliage, and a mass of glowing color later.

Returning again to the advantages of the place, there are many trees and shrubs more or less useful, more or less doubtful, elsewhere in Massachusetts, which may be counted upon here. Among these are the Sweet Gum, with its star-shaped leaves that keep their color and freshness long into and often beyond October; and even then keeps many that are green as a setting for the crimson-maroon and golden-yellow of the rest. The Hollies, the ever-green sweet-scented Magnolia glauca, the Irish Yew and Juniper, the Golden Yew, the Cypress, all the Retinisporas, are thrifty here; and I am told by a most trustworthy person that there is a Live Oak of considerable size, of many years' standing and in good health, near Kingston.

Many of the ornamental evergreens which elsewhere must be stored in the pit, or, if left out, are made ragged with frost-bites and brown patches, appear here after the winter in perfect condition, with no protection except perhaps mulching; so do, of course, Rhododendrons and Mountain Laurel, which flourish greatly.

With such advantages, may one not look forward confidently to the fulfillment of a belief that this will become a region of delight to the lover of landscape-gardening?

Boston, Mass. *Wm. Minot, Jr.*

Pitch Pine from Seed.

To the Editor of Garden and Forest:

Sir,—A large field, worthless for cultivation, almost pure sand, in places a little loamy, is growing up with Bayberry, Sweet Fern and Golden-rod. Would seeds of *Pinus rigida* catch here, and if so, how should they be sown, or is there any chance of success in using other tree-seeds, and if so, what sorts—either deciduous or evergreen? Expense is very much to be considered.

Providence, R. I. *Bayberry.*

[Such land as our correspondent describes will quickly produce a crop of Pitch Pine (*Pinus rigida*); but it often possesses more plant-food than its natural plant-covering would indicate, and such land will often grow White Pines, Oaks and Chestnuts of a considerable size and value, as the plantations made in East Greenwich, Rhode Island, by Mr. Henry G. Russell demonstrate. The best way to plant Pitch Pine is to sow the seed in the spring with an ordinary seed-sower in shallow furrows four or five feet apart each way; but, as the surface of this particular piece of ground is already more or less covered with dwarf shrubs and other plants, it would be cheaper to scatter the seed broadcast over the surface and take the chance of a sufficient number germinating to cover the ground with plants. White Pines are best transplanted when ten or twelve inches high. It is a good plan to plant acorns of the White, Red and Black Oaks and Chestnuts among young Pines, to replace these in case they are destroyed by fire or other causes, or to take their place after the Pines are cut. The seeds of such deciduous trees can be quickly and cheaply planted in holes an inch or two deep, made with an ordinary walking-stick. The holes, after the seeds have been dropped in, should be covered by a pressure from the foot, which will make the soil compact over them. The seedling Oaks and Chestnuts will exist for years under the dense shade of the Pines, and will grow rapidly as soon as light and air are admitted to them.—Ed.]

Recent Publications.

The relation of electric light to vegetation is a subject of interest to horticulturists, both from a scientific and economical standpoint, and therefore we are glad to see in Bulletin No. 30, of the Cornell Experiment Station, an account of what Professor Bailey accurately calls "Preliminary Studies of the Influence of the Electric Arc Lamp upon Greenhouse Plants." The bulletin contains some forty pages, and therefore we are able to give only a condensed account of the methods employed and the conclusions reached.

A forcing-house, twenty feet by sixty, was divided into equal portions by a partition, one of which was left under ordinary conditions of sunlight during the day and darkness at night. The other had sunlight during the day, and in the first series of experiments an electric light was suspended from the peak of the house, which was run all night from dusk to daylight. The same kind of vegetables were planted in each compartment, and, as a rule, the general effect of the electric light was to hasten maturity, and this acceleration was greater as the plants were nearer to the light. This tendency was particularly marked in Endive, Spinach, Cress and Lettuce, so-called "leaf-plants." They ran to seed before edible leaves were formed, and the leaves of those near the light were small and curled. The Spinach under electric light matured good seeds, while that in the dark house was still making large edible leaves with no indication of flower-stalks. The microscope showed that there was apparently the same amount of starch in the plants of each compartment, though the starch-grains of the plants under the electric light were larger, had more distinct marking and gave a better color-test—that is, they seemed more perfectly developed than in the others. Lettuce behaved in the same way, most of the plants being killed outright for three feet on either side of the lamp soon after they came up, and the plants which survived were seriously injured, the leaves being curled and small. The plants increased in stature and vigor and size of the leaves as they were at greater distances from the lamp, and those nearest the lamp made the most of their leaves early in their growth. The plants at five weeks all ranged from a little more than one inch to a trifle over two inches high, while the average height of the plants in the dark house was two and one-quarter inches, and they were much more vigorous and had larger and darker leaves. In two varieties of Cress the plants under the electric light were in bloom although they were small and sickly, while those in the dark house were strong and vigorous, with good leaves and no blossoms. Endive gave practically the same results. It chanced that two rows of plants were parallel to each other in the lighted house, but one was shaded by an iron post only an inch and a half in diameter, while the other stood in the full rays from the arc. Two months after planting, the average weight of the plants in full light was about fifty grains, and that of the plants in the shade of the post was ninety-four grains, while the average plant in the dark house of the same age weighed 575 grains, and had larger leaves and of a better color than those grown in the other apartment. Young Radish-plants seemed strongly attracted by the electric light, and in the morning they all leaned at an angle of from sixty to forty-five degrees toward the lamp. During the day-time they all would straighten up again, but would reach out for the lamp on the succeeding night, and this was repeated until the roots began to swell and the plants became stiff. When the Radishes were large enough to market, the entire plants in the light house were lighter by nearly half than those in the other compartment, while the tubers were lighter by more than fifty per cent., and there were three times as many of these large enough for market in the dark house as there were in the light house. All these results are made very striking in the bulletin by reproductions of photographs, which show clearly the differences, while chemical analysis showed that plants under the electric light had reached a greater degree of maturity than those under normal conditions.

Altogether it was plain that the plants in the lighted house were injured, and the question was, whether this was due to the quality of the electric light or to the fact that the plants were in continuous light during the entire twenty-four hours. To settle this point some plants were covered during the day so as to receive no sunlight, although they were well ventilated, and the covers were removed so that they could receive electric light for twelve hours during the night. But under these conditions Radishes made but a sickly growth, assumed a faint green color, and died within three or four weeks. An experiment of the same character was now conducted on a larger scale when the hours of sunlight were about equal to those of electric light, and the plants were shaded, not completely, but only from the direct rays of the sun, so that they could receive diffused light. They quickly died. Lettuce, Beans, Corn and Potatoes repeated the same lesson. Plants which had already been well started behaved in the same manner, so that it seems to be established that, within the range of an ordinary forcing-house, a naked arc-light running through the night is injurious to some plants, and that it was not found profitable in any case.

The fact, however, that the light hastened maturity or seed-bearing suggested that some modification of the light might be useful under certain conditions, and, therefore, an experiment was made with a protected light running through the night; that is, a white opal globe was placed over the lamp, and, for five weeks, experiments similar to those formerly described were carried on. The effect of this modified light was much less marked than that of a naked light, the plants showed less tendency to run to seed, and were not so much affected by proximity to it. Lettuce, however, was decidedly better under the shaded electric light. This fact that the Lettuce, as well as the leaves of Radishes, grew larger under the subdued light than in ordinary conditions, indicated that there might be conditions under which artificial light could be made profitable to the gardener, and therefore an experiment was made, during the early part of the present year, with the naked light running for a portion of the night only. The house was arranged as before, but the lamp was connected with the street-lighting system, so that it never ran on moonlight nights, and only for a few hours on dark nights. Under these conditions Lettuce was greatly benefited. The plants were fit to market two weeks earlier in the lighted compartment than they were in the other. They were on the benches only forty-four days before the first heads were fit to sell, and during this time there were twenty nights in which the electric light had not been run, and during the whole time there had been but eighty-four hours of electric light, which

would cost about $3.50. It was not known how far the influence of this light would extend, but it was noteworthy that the results were as well marked in the most remote parts of the house as they were near the lamp.

These results suggest many questions which can only be answered by further trials. We need to know whether there is any particular time in the life of the Lettuce-plant when electric light has a predominating influence; whether a mild light is as good as a strong one; whether the failure of the light during moonlight nights is a drawback; to what distance the influence of the light extends; whether the same results can be obtained by hanging a lamp over the house as inside of it, so that several houses could be lighted at once; and whether any other plants can be profitably forced by electric light.

Experiments with ornamental plants showed that the influence of light upon the productiveness and color of the flowers varied with different species and different colors of the same species, and that there is usually a perceptible gain in earliness under the lamp, so that on the whole it seems possible that electric light can be used to pecuniary advantage in floriculture.

The second part of the bulletin gives an account of the experiments tried elsewhere, commencing with some made by Hervé-Mangon thirty years ago, and including those of Dr. Siemens, which have been published in the *Proceedings of the Royal Horticultural Society*, and of Dehérain's tests conducted at the Exposition d'Électricité, which were published in the *Annales Agronomiques*, vii., 551.

In conclusion, it appears, from the many conflicting and indefinite results so far obtained, that the problems to be solved vary widely under different conditions and with different plants. The points made clear are: The electric light promotes assimilation, and often hastens growth and maturity; is capable of producing natural flavors and colors in fruits; often intensifies colors of flowers, and sometimes increases the production of flowers. Since it is found that periods of darkness are not necessary to the development of plants, there is every reason to suppose that the electric light can profitably be used in growing them. It will be necessary, however, to overcome the injurious influences which this light exerts upon plants too near it and the too rapid maturing of some species—in short, a whole series of practical adjustments of conditions to individual circumstances is required. So far, we have learned more of the injurious effects of the light than of the beneficial ones, but this means simply that we are learning definite facts concerning the influence of the electric light upon vegetation, and in some cases, especially in the Lettuce tests carried on at Cornell, this has already been found a useful adjunct to a forcing establishment. Professor Bailey concludes this highly interesting and instructive bulletin as follows:

"The experiments suggest many physiological speculations upon which it is not the province of this bulletin to enter. Yet two or three of them may be mentioned. It is a common notion that plants need rest at night, but this is not true, in the sense in which animals need rest. Plants have simply adapted themselves to the conditions of alternating light and darkness, and during the day they assimilate or make their food, and during the night, when, perforce, assimilation must cease, they use the food in growth. They simply practice an individual division of labor. There is no inherent reason why plants cannot grow in full light, and, in fact, it is well known that they do grow then, although the greater part of growth is usually performed at night. If light is continuous they simply grow more or less continuously, as conditions require, as they do in the long days of the arctic regions, or as our plants did under continuous light. There is no such thing as a plant becoming worn out or tired out because of the stimulating influence of continuous light.

"It would seem, therefore, that if the electric light enables plants to assimilate during the night, and does not interfere with growth, it must produce plants of great size and marked precocity. But there are other conditions, not yet understood, which must be studied. Our Radish-plants, and many others, were earlier, but smaller, under the influence of the light. Observation and chemical examination showed that a greater degree of maturity had been attained. Perhaps they assimilated too rapidly; perhaps the functions of the plant had been completed before it had had time to make its accustomed growth. Perhaps the highly refrangible and invisible rays from the electric lamp have something to do with it. In fact, this latter presumption probably accounts for much, if not all, of the injury resulting from the use of the naked light, for the effect of the interposition of a clear pane of glass is probably to absorb or obstruct these rays of high refrangibility. Good results which follow the use of a globe or a pane of glass show, on the other hand, that the injury to plants cannot result from any gases arising from the lamp itself, as has been supposed by some observers. In our own experiments, particularly with the Brush lamp, there was no perceptible odor from the gases of combustion; and it may also be said that commercial forcing-houses, like our own, are not tight enough to hold sufficient quantities of these gases to injure plants.

"It is highly probable that there are certain times in the life of the plant when the electric light will prove to be particularly helpful. Many experiments show that injury follows its use at that critical time when the plantlet is losing its support from the seed and is beginning to shift for itself, and other experiments show that good results follow its later use. This latter point appears to be contradicted by Dehérain's results, but his experiments were not conducted under the best normal conditions.

"On the whole, I am inclined toward Siemens' view, that there is a future for electro-horticulture."

Periodical Literature.

The mid-August issue of the *Revue Horticole* describes the interesting and important discovery of a French entomologist, Monsieur Lemould, who has devised the means of destroying the larvæ of the Hanneton, the insect which in this country is known as the May-bug or Dor-bug, and which for years has done a serious injury to agriculture and horticulture in France and in this country also. Monsieur Lemould has been studying a cryptogamic plant parasite on the larvæ of the Hanneton, and has been experimenting with it at Céaucé, where he found a field so infested with the white grubs, as these larvæ are usually called here, that the sod could be lifted with the hand. About ten per cent. of the grubs was dead, their bodies being covered with a white moss-like cryptogamic growth. The dead were placed in contact with healthy grubs, and these at the end of a couple of weeks had all contracted the disease. Two months later the spread of the parasite had made enormous progress, the affected grubs amounting to from sixty to seventy per cent. of the whole number left alive in the field.

On the 25th of last July Messrs. Prillieux and Delacroix communicated to the Academy of Science the result of their experiments on the destruction of white grubs by the aid of *Botrytis tenella*, a minute cryptogam, whose spores propagate with prodigious rapidity, and which they had cultivated in the following manner: A large crockery dish was set in a cool, shady place and filled with a thin layer of moist sand. Upon the sand were placed one hundred white grubs, and these were covered with the spores of the plant reduced to powder. A covering of damp moss was then placed over the grubs, and the whole was covered with boards. In six or seven hours the grubs were infected, and were then planted in an infested field. The disease spread rapidly, and at the end of a few months destroyed all the grubs, which died by myriads.

The practical results of these experiments are assured, it appears, and this new insecticide can be purchased from certain French chemists, who are prepared to deliver tubes filled with it similar to tubes of vaccine. "We cannot foretell yet," the editors of the *Revue* remark, "what results this discovery will have for our agriculture or say that if its employment is easy, practical and cheap, it will enable our agriculturists to fight a pest which ravages whole regions, as was seen three years ago in the departments of Mayenne and of Orne, but it seems, at least, that it is capable of rendering immense services to horticulture."

The July number of *Pharmaceutische Rundschau* contains an instructive article on the alleged poisonous properties of the Wild Parsnip, that is, the common garden Parsnip, *Pastinaca sativa*, when it has run wild. It is stated in Dunglison's Medical Dictionary that this is an irritant poison, and this is a widespread popular belief. Dr. Frederick Power, however, read a paper before the Wisconsin State Medical Society last June, in which he gives the result of his investigation of several cases of what was said to be poisoning by the Wild Parsnip, which he had seen reported in the papers. In every case where fatal effects occurred it was found that the root eaten was not the Parsnip but *Cicuta maculata*, a plant which belongs to the same family, and is known under the common names of Spotted Cowbane, Musquash Root and Water Hemlock. So far as Dr. Power's investigations go, the wild Garden Parsnip is not at all poisonous when taken, either in a raw state or when cooked. Since this root of Cicuta is most frequently taken for the wild Parsnip, and since such mistakes are often attended with fatal results, the distinguishing characters of the two roots are given. *Cicuta maculata* has

an oblong thick fleshy root-stock, or a fascicle of fleshy tubers, which sends out several strong light-colored rootlets in a horizontal direction. The interior of the root is nearly white, and contains one or more cavities formed by the absorption of the tissue, and these cavities, which form one of the special and most important characteristics of the Cicuta root, may be easily seen when it is cut longitudinally through the centre. The root, when cut in this way, exudes drops of a yellow resinous juice which possesses a strongly aromatic odor closely resembling that of the Parsnip. The taste is at first sweetish, but afterward sharp and acrid. Cuts of the two roots are reproduced from Dr. Power's paper, in which their individual characters are very plainly seen.

Notes.

The first elementary work on botany published in this country bore date 1803, and was written by Professor D. S. Barton. The systematic teaching of botany in American schools seems not to have begun until some twenty years later.

Professor Goodale has commenced the publication in the *American Journal of Science* of a series of short sketches of the botanic gardens in the equatorial belt and in the south seas, which he has visited in his recent journey around the world.

At its recent meeting in Washington the Association of Agricultural Colleges and Experiment Stations passed a resolution urging the Secretary of Agriculture to do what he could to secure the passage of a law or laws for the preservation of the public forests.

Several of the large Palms in Horticultural Hall, Fairmount Park, have been fruiting freely this season. Among them are three or four specimens of *Seaforthia elegans*, and the long drooping branchlets of the flower-clusters are studded with fruits of various colors, from olive-green to dull red, according to their degree of ripeness. *Thrinax elegans* has also produced an abundant crop of seeds in the same establishment.

Flower-beds arranged geometrically are not always to be commended, but a circular bed filled with succulents seems to attract more attention than any among the large number of beds in Fairmount Park, Philadelphia, this season. The bed is between twenty-five and thirty feet in diameter, and special care has been taken in arranging the thousands of plants it contains with due regard to their individual forms and colors.

Mr. C. L. Allen says, in the *American Agriculturist*, that in cultivating the Amaryllis the most common mistakes are (1) the use of too large pots, (2) the too deep planting of the bulbs, and (3) too frequent shifting. As a rule, the bulbs should not be more than half-covered with soil, and they should not be shifted until the pots are filled with roots, and then they should be placed, while resting, in pots only one size larger than those they were occupying.

It is observed by many persons in the east that the California pears, which are so plentiful this year, are better-flavored than in former years, although they are somewhat smaller. This change is attributed to the fact that the California fruit-growers no longer keep their orchards irrigated up to the time when the fruit ripens, but shut off the water when the pears are well grown, so that they are permitted to ripen in the California sun and wind without the aid of artificial moisture.

The value of our native *Viburnum cassinoides* has often been insisted on in these columns. At this season of the year no hardy shrub, whether in flower or in fruit, equals it in beauty. The fruit is now bright pink, although in many of the clusters some of the berries are flesh-colored, and others have already assumed the dark blue of their maturity. The contrast of the colors of the different berries among themselves and with the large and lustrous leaves is beautiful. This inhabitant of our northern swamps takes kindly to cultivation, and is worthy of a place in any garden.

The common Stramonium, or Thorn-apple (*Datura Stramonium*), is, in some parts of New England, generally called "Jamestown-weed," or, by elision, "Jimson-weed." This name, says a recent writer in the *Atlantic Monthly*, sprang from the fact that the plant, which was medicinally esteemed, had been brought over by the Jamestown colonists and "spread miraculously" from the place of its first establishment. At an early date it had become so troublesome in the New Haven colony that a law was passed to enforce its destruction as "a great, stinking, poisonous weed."

Every year there is a more general appreciation of the truth that public pleasure-grounds are indispensable to every urban community where the health and happiness of its citizens are considered worthy of attention. The last legislature of Pennsylvania recognized the tendency of public sentiment in this matter by passing a law to enable the various cities of that commonwealth to acquire lands for park purposes. It authorizes all cities in Pennsylvania to purchase and hold ground for such purpose, and empowers the councils of such cities to enact ordinances for the purchase, improvement, management and control of such ground; to enforce said ordinances by proper penalties; and to make appropriations for the payment of property acquired under authority of this act.

The botanists who attended the meetings of the American Association for the Advancement of Science at Washington last month were each presented with a neat little hand-book, entitled "The Trees of Washington," which had been prepared by Geo. B. Sudworth, Botanist, and B. E. Fernow, Chief of the Forestry Division. It contains a list of all the trees in the grounds of the city, with numbers to indicate the park in which specimens are to be found. The grounds containing the greatest variety are represented by plans, with a list of the species of trees there found and the location of the individual trees indicated. The different parks and grounds of the capital contain many interesting trees which are overlooked for lack of such a guide, and this list, with the accompanying plans, will prove acceptable to many other visitors, as they did, no doubt, to the Botanical Club for whom it was prepared as a souvenir.

A letter from the Acting Chief of the Department of Horticulture of the World's Columbian Exposition informs us that the building for the horticultural department, which is to be located immediately south of the entrance to Jackson Park, in the main portion of the World's Fair Grounds, will be 1,000 feet long, with an extreme width of 286 feet. The plan embraces a central pavilion, with two end pavilions, each connected with the centre by front and rear curtains, which form two interior courts, each 270 x 88 feet. These courts are to be decorated in color and to be planted with ornamental shrubs and flowers. The central pavilion is to be covered by a dome 187 feet in diameter and 113 feet from the ground, under which it is proposed to exhibit tall Palms, Bamboos and Tree Ferns. The contracts for the building have been let, the estimated cost being $400,000. We are told that the horticultural exhibition is to excel anything heretofore attempted.

Mr. J. J. Willis, who superintends the experiments of Sir John Bennet Lawes, says that it is now admitted at Rothamsted that free nitrogen from the air is fixed in the growth of some leguminous crops under the influence of suitable microbe infection and the development of nodules on the roots of the plants. How this fixation is brought about is yet unknown. Dr. Gilbert does not believe that the plant accomplishes this through its leaves, nor that the microbes do the work in the soil so that the roots can take up the nitrogen compounds, but that the nitrogen, by the aid of the organisms, is fixed in the root-nodules, and from thence absorbed and utilized by the last. Among many interesting queries suggested by this now recognized fact, is one as to the cause of "Clover sickness." Experience has shown that clover, in many cases, cannot be grown by ordinary methods on lands where it once flourished. Is this because of the absence of the microbes which help to form the nodules and fix the nitrogen?

In a recent quarterly number of the *Journal of American Folk-lore* reference is made to a paper called "Popular Names of American Plants," which was read at a meeting of the Boston Association of the American Folk-lore Society last spring by Mrs. F. D. Bergen. This lady is desirous of completing a collection of such names, and, says the Journal, "as the interest and value of a good collection of popular plant-names is obvious, it is very desirable that persons who may be able and willing to contribute should send their material to Mrs. Bergen, Cambridge, Massachusetts," or else to the editor of the Journal itself. In connection with this notice is printed a letter from a resident of Massachusetts, in which are cited scores of popular plant-names current in various parts of New England at the time when the writer was a child, and which includes many that seem unfamiliar to-day. One of the most curious is Election Pink, applied to *Rhododendron nudiflorum*, "because in bloom at the old-time 'election' when the governor took his seat"; and another is Heart's-ease, since it was applied, not to the Pansy, but to *Polygonum Persicaria*, more commonly called Lady's-thumb. A pretty term was Baby-feet for *Polygala paucifolia*, and another for *Arisæma triphyllum*, which New England children now call Jack-in-the-pulpit, was Lady-in-a-chaise.

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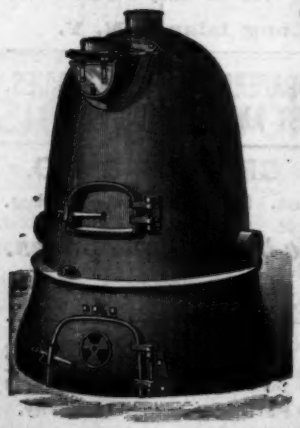

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